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09/833,546	04/11/2001	Ralph A. Mosher	D/A0584	4763

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EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
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1774

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 20040223

Application Number: 09/833,546
Filing Date: April 11, 2001
Appellant(s): MOSHER ET AL.

Annette Blade
For Appellant

MAILED

APR 06 2004

GROUP 1700

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 10, 2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1 and 3-25 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

6,096,470	FULLER	08-2000
5,663,283	SAKAKIBARA	09-1997

Landis et al. "Handbook of Thermoset Plastics" 2nd Ed. (1998), pp. 426.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,721,032 to Parker et al. in view of USPN 6096470 to Fuller and further in view of USPN 5,663,283 to Sakakibara et al. and *Handbook of Thermoset Plastics* (2nd Edition) ©1998.

Parker teaches an endless seamed flexible intermediate belt comprising a first and second end, where each comprises plural mutually mating elements, joined in an interlocking relationship, forming a seam. **See col. 8, lines 20-60.** The belt comprises a substrate of a polyimide, polyamide, or polycarbonate and the seam comprises an adhesive comprising a polyamide strip. See col. 2, lines 25-30, col. 5, lines 11-20, and col. 9, lines 20-38. The plurality of mutually mating elements are in the form of a puzzle cut pattern, which further comprise a first projection and second receptacle which are curved, forming a joint between first and second

Art Unit: 1774

ends. See Figures 1-11, col. 5, lines 45-65. Parker teaches the volume resistivity of 10^8 to 10^{11} ohms-cm at col. 5, lines 24-27 (meeting claims 19-20).

Parker does not explicitly state the adhesive polyamide further comprising an alcohol soluble polyamide, consisting of methoxy or methylene methoxy groups, an electrically conductive filler such as a quaternary ammonium salt, having metal oxides such as titanium dioxide aluminium oxide, or carbon fillers such as carbon black or fluorinated carbon, or a polymer filler such as polypyrrole, or charge transporting molecules such as bis(dihydroxy diethylamino) triphenyl methane, or dihydroxy tetraphenyl biphenylene diamine, or a crosslinker such as oxalic acid, or the structure of claims 2-6. However, Fuller discloses it is known in the art to use the aforementioned alcohol soluble polyamide adhesive additives for producing flexible electrophotographic imaging members such as an endless belt at col. 7, lines 1-15, 49-67, col. 8, lines 1-17, 50-65, col. 9, lines 1-35, col. 16, lines 50-53, col. 19, lines 39-50, col. 20, lines 20-25. Fuller further details the polyamide structure of claims 2-5 at col. 15, especially lines 55-68 and col. 16, lines 1-2. With regard to the n number, the same consistency (solid) is produced, and $n = 50$ to 1000 is equivalent to $x = \text{an integer}$. While Fuller does not show the R on the N; however, Fuller does teach the R can be substituted on the N in order to crosslink, as taught at col. 15, line 31. Parker and Fuller are analogous art because both references are in the same field of endeavor, such as electrophotography teaching endless belts. Hence, it would have been obvious to one of ordinary skill in the art to modify the endless belt of Parker to include the adhesive composition of Fuller to produce an improved belt having properties such as a longer wear life as taught by Fuller at col. 5, line 67, and col. 6, lines 1-50 and to substitute the R on the N as taught by Fuller in order to crosslink at col. 15, line 31.

Parker does not teach a substrate of polyaniline polyimide. However, Sakakibara teaches it is known to use polyaniline with electrically conductive fillers and the same adhesive additives above to produce electrically conductive supports for electrophotographic members at col. 6, lines 20-64. Moreover, pg. 426 of the Handbook of Thermoset Plastics by Landis et al. states it is known to blend polyaniline with polyimides, useful as coats or conductive composites to serve two roles of loadbearing and electrical current dispersal. Therefore, it would have been obvious to one of ordinary skill in the art to modify the belt of Parker to include polyaniline polyimide on a substrate as used by Sakakibara and further taught by Landis to improve conductivity of a substrate. The examiner has established a *prima facie* case of obviousness and has provided evidentiary support thereof for the rejection under 35 U.S.C. 103(a).

(11) Response to Argument

Appellant alleges there is no *prima facie* case of obviousness based on the allegation that no suggestion is taught toward a seam comprising an adhesive comprising an alcohol-soluble polyamide. Appellant contests that the alcohol-soluble polyamide is used in a layer and not used as an adhesive, thereby not teaching alcohol-soluble polyamide used to bind together two ends of a belt. The Appellant has not provided a persuasive argument. Parker shows polyamide used as an adhesive, and in Example 1 states polyamide melting into the seamed area of the belt. Therefore, the alcohol soluble polyamide is taught as added to the interlocking ends, to bind two ends together. Parker show polyamide used in the seams and Fuller shows that *alcohol soluble* polyamide as adhesive in belts, teaching the same chemical structure. See col. 6, lines 50-59, col. 8, lines 4-10, and especially col. 15, lines 33-36. The properties of alcohol-soluble polyamide as so disclosed. Further the term polyamide encompasses many kinds of polyamides

Art Unit: 1774

including Appellant's alcohol soluble polyamide. The alcohol soluble polyamide automatically functions as an adhesive, the same material is used as Appellant claims, so the function is the same. Appellant appears to ignore this unassailable fact. Parker teaches the exact same puzzle cut seam as claimed. Parker does not need to show the polyamide as being alcohol soluble, but since Fuller used as the secondary reference, states alcohol soluble polyamide as adhesive, the motivation to combine is present.

With regards to Appellant's argument that the *Handbook of Thermoset Plastics* and Sakakibara do not teach alcohol soluble polyamide, the aforementioned references were included to show only that polyaniline and polyimide are applicable to any substrate, such as a seam endless belt, to improve conductivity. Again, the Handbook and Sakakibara are used as secondary references, not used as primary references, and therefore do not have to teach use of an alcohol-soluble polyamide adhesive to bind two ends of a belt together as Appellant contends. Fuller teaches alcohol soluble polyamides as adhesive. Appellant's contention that all references do not teach the mutually mating elements relationship of the seamed belt, all the references do not have to as Parker, the primary reference, discloses the same orientation of the seamed belt. The other references are analogous art and were not included for purpose of showing a seamed belt.

Appellant urges that Fuller does not teach an alcohol-soluble polyamide material as an adhesive between seams, but as a layer for photoreceptor not for seamed belts. As previously set forth, Fuller shows that *alcohol soluble* polyamide material as adhesive in belts, teaching the same chemical structure. See col. 6, lines 50-59, col. 8, lines 4-10, and especially col. 15, lines 33-36. It would have been obvious to one of ordinary skill in the art to modify the belt of Parker with

Art Unit: 1774

the alcohol soluble polyamide of Fuller to produce an improved belt having properties such as a longer wear life as taught by Fuller at col. 5, line 67, and col. 6, lines 1-50.

Further to Appellant's contentions towards Fuller teaching the use of alcohol soluble polyamide material as a layer for photoreceptors, not a belt. The Examiner would like to point out that the belt of Parker teaches the belt made of a thermoplastic polyamide web material in Example 1. Fuller provides this same material and therefore, the combination is valid. See Fuller's description of motivation specifically at col. 7, lines 4-15, where Fuller explains: as electrically non-conducting materials there may be employed various resins known for this purpose including polyesters, polycarbonates, *polyamides*, polyurethanes, and the like *which are flexible as thin webs*. Further within that column, teaching an electrically conductive substrate may be in the form of an *endless flexible belt and a web*. Therefore Fuller teaches suggestion and motivation to combine with Parker as the exact same belt material is provided by both references. The Appellant has not persuasively argued. To Appellant's argument that there is no reasonable expectation of success, the Examiner, as aforesaid, has provided some suggestion of the desirability of doing what the inventor has done (e.g. an adhesive of a seam of a belt comprising mutually mating elements in an interlocking relationship as instantly claimed). To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). The same materials are utilized and therefore, some advantage or expected beneficial result would have been produced by their

Art Unit: 1774

combination. *In re Sernaker*, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983). Fuller not only teaches alcohol-soluble polyamide as material used for overcoats, as Appellants point out, but also for use with flexible endless belts and webs. Therefore, motivation exists to combine the teachings of Fuller with the endless seamed belt of Parker and reasonable expectation of success would naturally follow.

Appellant alleges Fuller teaches away from the claims because Appellant points to col. 7, lines 49-55 that excludes polyamide adhesive. Appellant appears to ignore the teaching earlier within col. 7, which explicitly points to using polyamide adhesive material at lines 4-15.

Appellant further alleges the references do not recognize the problems solved by the instant claims. The Examiner does not agree. The materials as aforementioned by both Fuller and Parker provide for the instant invention and thereby would solve a similar problem, providing an electrically conductive bond via alcohol-soluble polyamide adhesive between the seams. Conclusively, the arguments of Appellant are not persuasive as argued by the Examiner for the reasons set forth above.

For the above reasons, it is believed that the rejections should be sustained.

Application/Control Number: 09/833,546

Page 9

Art Unit: 1774

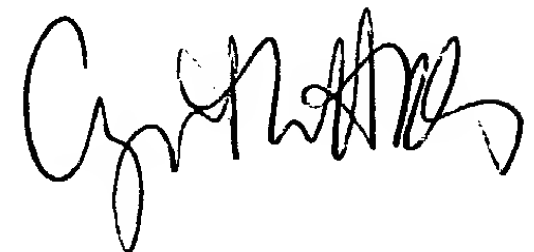
Respectfully submitted,

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Examiner
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April 1, 2004

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